Evaluation of NASA SPoRT's Pseudo-Geostationary Lightning Mapper Products in the 2011 Spring Program

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NASA's Short-term Prediction Research and Transition (SPoRT) program is a contributing partner with the GOES-R Proving Ground (PG) preparing forecasters to understand and utilize the unique products that will be available in the GOES-R era. This presentation emphasizes SPoRT's actions to prepare the end user community for the Geostationary Lightning Mapper (GLM). This preparation is a collaborative effort with SPoRT's National Weather Service partners, the National Severe Storms Laboratory (NSSL), and the Hazardous Weather Testbed's Spring Program. SPoRT continues to use its effective paradigm of matching capabilities to forecast problems through collaborations with our end users and working with the developers at NSSL to create effective evaluations and visualizations. Furthermore, SPoRT continues to develop software plug-ins so that these products will be available to forecasters in their own decision support system, AWIPS and eventually AWIPS II.

In 2009, the SPoRT program developed the original pseudo geostationary lightning mapper (PGLM) flash extent product to demonstrate what forecasters may see with GLM. The PGLM replaced the previous GLM product and serves as a stepping-stone until the AWG's official GLM proxy is ready. The PGLM algorithm is simple and can be applied to any ground-based total lightning network. For 2011, the PGLM used observations from four ground-based networks (North Alabama, Kennedy Space Center, Oklahoma, and Washington D.C.). While the PGLM is not a true proxy product, it is intended as a tool to train forecasters about total lightning as well as foster discussions on product visualizations and incorporating GLM-resolution data into forecast operations. The PGLM has been used in 2010 and 2011 and is likely to remain the primary lightning training tool for the GOES-R program for the near future.

This presentation will emphasize the feedback received during the 2011 Spring Program. This will discuss several topics. Based on feedback from the 2010 Spring Program, SPoRT created two variant PGLM products, which NSSL produced locally and provided in real-time within AWIPS for 2011. The first is the flash initiation density (FID) product, which creates a gridded display showing the number of flashes that originated in each 8×8 km grid box. The second product is the maximum flash density (MFD). This shows the highest PGLM value for each grid point over a specific period of time, ranging from 30 to 120 minutes. In addition to the evaluation of these two new products, the evaluation of the PGLM itself will be covered. The presentation will conclude with forecaster feedback for additional improvements requested for future evaluations, such as within the 2012 Spring Program.